1 **METHOD AND APPARATUS FOR SELF SERVOWRITING OF TRACKS OF A DISK**

2 **DRIVE USING A SERVO CONTROL LOOP HAVING A TWO-DIMENSIONAL**

3 **WEIGHTED DIGITAL STATE COMPENSATOR**

4 **ABSTRACT OF THE DISCLOSURE**

5   A method is disclosed for defining tracks on a rotating magnetic disk medium of a disk

6 drive. Reference tracks are followed using a servo control loop while writing servo burst patterns

7 defining a first target servo track. The servo control loop includes a two-dimensional digital state

8 compensator having a first input that receives position error signals, a first output that generates

9 control signals for positioning a transducer head, a second output that generates track-following

10 state variables, and a second input that receives processed and stored track-following state

11 variables. The first target track is followed using the servo control loop while servo burst patterns

12 are written, and while the processed and stored track-following state variables corresponding to

13 the servo burst patterns defining the first target track are applied to the second input.